

**GROUP III NITRIDE LASER DIODE AND ITS MANUFACTURING METHOD**

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**Abstract**

**PROBLEM TO BE SOLVED:** To provide a group III nitride laser diode with a cleavage plane as a light resonator surface, while using a sapphire substrate, and its manufacturing method.

**SOLUTION:** In a method for manufacturing a group III nitride laser diode, where a resonator surface is formed after group III nitride film made of  $\text{Al}_x\text{Ga}_y\text{In}_{1-x-y}\text{N}$  ( $0 \leq x, y, 0 \leq x+y \leq 1$ ) is formed on a sapphire substrate with C surface as a substrate surface, the reverse side of a substrate 10 where a specific group III nitride film is laminated is polished and thinned, a scribe mark T is formed at the reverse side of the substrate in parallel with the crossing line between (1-100) surface that is the cleavage line of the group III nitride film and a substrate surface, and cutting is made along the scribe mark by a knife edge K, thus cleaving the group III nitride film to form a bar B2.

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